Claims: I Claim:

1. A system for electronically actuating a firearm, comprising:
a target sensor unit configured to determine a target offset angle, compute a point-of-aim offset angle, and generate a target sensor signal when the target offset angle and the point-of-aim offset angle are substantially coterminous, having the same end point; and
a firing unit electrically coupled to the target sensor unit, the firing unit configured to electronically ignite one or more axially loaded ammunition loads upon receiving the target sensor signal and a trigger signal.

2. The system of claim 1, wherein the firing unit further comprises trigger means for generating the trigger signal.

3. The system of claim 1, wherein the target sensor unit further comprises:
a target sensor configured with a first detector to detect electromagnetic radiation having wavelengths within 8 to 14 microns and to generate detector signals; and
a target sensor processor coupled to the target sensor for analyzing the detector signals to generate the target sensor signal.

4. The system of claim 3, wherein the target sensor unit further comprises:
a second detector configured to detect electromagnetic radiation having wavelengths within 3 to 5 microns and having signals which are spatially correlated with the signals of the first detector having wavelengths within 8 to 14 microns, and

the target sensor processor analyzes signals from the first and second detectors,
which first and second detector signals in ratio are indicative of target temperature.

5. The system of claim 1, wherein the firing unit further comprises:
an ammunition tube configured to store the one or more axially loaded ammunition loads;
an ammunition tube receiver configured to insertably accept the ammunition tube;
a fire controller for generating a firing signal upon processing the target sensor signal and the trigger signal; and
a sequence controller for sequentially discharging the one or more axially loaded ammunition loads upon receiving the firing signal.

6. The system of claim 5, wherein the ammunition tube has a conically shaped receiver end electrically coupled to the ammunition tube receiver, and a distal muzzle end for guiding the discharged one or more axially loaded ammunition loads.

7. The system of claim 5, wherein an outer wall thickness of the ammunition tube is 0.03 to 0.25 inches.

8. The system of claim 5, further comprising:
a plurality of receiver tube electrical contacts;

a receiver firing circuit configured to electrically couple the sequence controller and the plurality of receiver tube contacts;

a plurality of ammunition tube contacts electrically coupled to the plurality of receiver tube contacts; and

an ammunition tube internal firing circuit for electrically coupling each of the plurality of ammunition tube contacts with a corresponding ammunition load of the one or more axially loaded ammunition loads.

9. The system of claim 5, further comprising:
a plurality of ammunition tubes;
an ammunition tube receiver configured to insertably accept the plurality of ammunition tubes; and
a sequence controller for sequentially discharging the one or more axially loaded ammunition loads in the plurality of ammunition tubes upon receiving the firing signal.

10. The system of claim 1, wherein:
the target sensor unit is further configured to compute the point-of-aim offset angle based upon motion of the firearm, a flight velocity of the one or more axially loaded ammunition loads, and a target range, and wherein the target sensor unit is further configured to determine one or more target offset angles, each based upon motion of a target, a flight velocity of the one or more axially loaded ammunition loads, and a target range.

11. The system of claim 10, wherein the target sensor unit further comprises an optical rangefinder for computing the target range.

12. The system of claim 3, wherein the target sensor is an array of microbolometer detector elements.

13. The system of claim 12, wherein the target sensor array is a quad cell detector array.

14. The system of claim 3, wherein the target sensor is an array of detector elements from among the class of barium strontium titanate, vanadium oxide, amorphous silicon or bimetal compositions.

15. The system of claim 14, wherein the position of the target is determined by the sum of the moments of the signals from contiguous detector elements illuminated by a target image.

16. A method for actuating a firearm having axially loaded ammunition loads comprising the steps of:
identifying a target based upon target radiation patterns;
determining a point-of-aim offset angle based upon motion of the firearm, and determining a target offset angle based on motion of the target;
electronically igniting one or more axially loaded ammunition loads when the end points of a point-of-aim offset angle and a target offset angle are substantially coincident.

17. The method of claim 16, wherein the determining further

comprises the steps of:

determining the point-of-aim offset angle based upon a bullet drop, a firearm delay time and the motion of the firearm; and

determining the target offset angle based on motion of the target, a flight velocity of the one or more axially loaded ammunition loads, and a target range, and:

wherein the identifying further comprises the step of identifying a target based upon target radiation patterns having wavelengths within 8 to 20 microns.

18. The method of claim 16, further comprising the step of computing a centroid of the target radiation patterns, the centroid corresponding to the target position.

19. The method of claim 16, further comprising the step of defining a central zone of the target radiation patterns, the central zone corresponding to the target position.

20. The method of claim 19, wherein the central zone is bordered by a radiance contour, the radiance contour defined at points within the target radiation patterns where a second derivative of radiance of the target radiation patterns is zero along a chord of the target radiation pattern.

21. A method for actuating a firearm, comprising:

computing a plurality of target offset angles based upon signal generated by a target sensor, each target offset angle of the plurality of target offset angles corresponding to a position of a target;

computing a point-of-aim offset angle based upon bullet drop and
motion of the firearm, and a target offset angle based upon target motion and time of flight of the missile from the firearm to the target;
generating a target sensor signal when a target offset angle from among the plurality of target offset angles and the point-of-aim offset angle have a common end point;
generating a trigger signal upon operator command;
generating an actuating signal when the target sensor signal and the trigger signal are generated simultaneously and electronically igniting one or more axially loaded ammunition loads when the actuating signal is received by a sequence control unit.

22. A system for actuating a firearm, comprising:
means for computing a plurality of target offset angles based upon signals generated by a target sensor, each target offset angle of the plurality of target offset angles corresponding to a position of the trajectory of a target;
means for computing a point-of-aim offset angle based upon bullet drop and motion of the firearm;
means for generating a target sensor signal when the end point of a target offset angle of the plurality of target offset angles is substantially coincident with the end point of the point-of-aim offset angle;
means for generating a trigger signal upon operator command;
means for generating an actuating signal when the target sensor signal and the trigger signal are generated simultaneously; and

means for electronically igniting one or more axially loaded ammunition loads when the actuating signal is received by a sequence control unit.